PROFESSIONAL ENGINEER

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Fall Issue

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Vol. 44 No. 2

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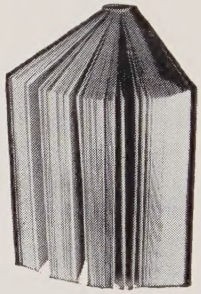

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(The October and December issues of PROFESSIONAL ENGINEER *will review activities since 1933)*

M. E. McIVER, Editor

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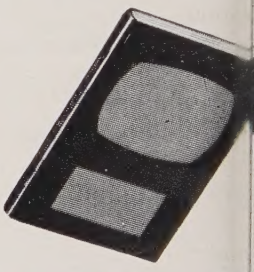

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A.A.E.'S Field of Activities

"To promote the social and economic welfare of the Engineer, to imulate public service in the profession, to encourage and develop the ficiency of the engineer and to promote unity in the profession," these re the aims of American Association of Engineers and have been our bjectives since the founding of the Society in 1915, almost forty-five ears ago.

The Association restricts its activities to problems that may be assified under any of the following heads: Business Problems, Civic esponsibilities, Public Relations, and Unity in the Profession.

We keep American Association of Engineers open to all members of e profession, regardless of branch or functional classification. We do t restrict our membership to those who have a legalistic claim to the le "professional engineer" through registration—not so long as regis- ation is non-essential to practice in many grades of professional engi- ering and not until our laws blanket in all who, through education or -the-job training, have acquired sound knowledge of engineering fun- mentals. Not, in other words, until our laws effectively and realistically fine the scope of the profession, and regulate entrance thereto.

To the best of our ability, we serve as a clearing house of informa- n on the varied activities of all engineering societies in respect to n-technical problems which are common to members of the profession.

With all our resources and energies, we deal with those problems, ting, to the limit of our powers, as a powerful and truly inclusive ciety, supported by a majority of members of the profession, would act any crisis. Our work on the Wagner Act and the Taft-Hartley Act is pical; so is our campaign against dishonest trade and correspondence nools; our fight on the forty-year deadline; and unfavorable legislation, ch as the Kilgore bills in the late forties. At all times we have endeav- ed to keep our members informed on any activity that might tend to aken the professional standing of the Engineer.

We firmly believe that engineering is a profession—and that it is, reover, one profession. We still believe that the professional and nomic status of engineers will be satisfactory only when engineers of branches, and in all stages of professional development join forces a single independent organization devoted to advancement of their mmon interests. Such a society would represent the profession in civic d state affairs, and would promote the welfare of the individual mem-

Phoenix Chapter engineers did some surveying for the Salvation Army, site Spanish American Social Service—a type of service the Chapter does for its co munity. Reading from left to right: Dan Wier, Chapter Secretary; Harry Jones, P Pres., Phoenix Chapter; A. C. Clark, former Dep. Chief, U.S.B.P.R., Wash, D Bud Nunn, member and Julius Irion, member. Brig. McHarg, Comdr., Border D Salv. Army.

bers and most important it would establish a definite line of demarcati between a professional and a non-professional, in other words separa the technicians from the professional engineers.

To develop the efficiency of the Engineer, to be worthy of the high compensation and recognition, to place himself in a position so that can serve his community adequately, the engineer must increase his e ciency in the fields neglected by most engineering schools—such as in t field of expression (written and oral), economics, finance, history, p chology, and so forth. Unless he broadens himself the engineer au matically limits himself to his own narrow field.

Of course, license laws that really control entrance to the professi and definite responsible charge, would alleviate some of the ills n existent in engineering, and eventually with the expiration of the gra father clause provisions, entirely correct them. But we have no such la and no strong indication that they ever will be passed. There is no registration law on the books today that can be enforced to control t relatively small segment of practice that the laws attempt to restrict; n one that even pretends to regulate entrance to the profession, althou we do find considerable thought given to the idea. One bright light on t horizon is the fact that industry today is expressing more interest registration of engineers than ever before, many companies specifyi registered engineers in their personnel specifications.

Registration laws that would control entrance to the profession w proper enforcement would do much to enhance the prestige of the en neering profession, and secure for the individual engineer his right place in the sun.

Slanting in Technical Communications

David H. Grover, Instructor of Speech
Oregon State College

N trying to get the engineer to communicate effectively we frequently encounter some resistance to the idea of slanting facts and ideas toward particular audience. Apparently the term *slanting* has acquired an unleasant connotation because it has been associated with propaganda camaigns which have taken liberties with the truth. As a result, the word has ome to suggest bias or half-truth to some individuals. This is unfortuate, for it means that some misguided technical men may be avoiding the gitimate technique of slanting because it somehow sounds unprofessional unethical. Others may avoid slanting simply because they are unaware the need for adapting technical material to specialized situations.

Whatever his reasons, the engineer who rejects the true concept of anting finds himself handicapped professionally by the inability to make s ideas understandable and interesting in a variety of speaking or writing tuations. We've all had the experience of attending meetings or convenon sessions in which the speaker managed to convey a lot of information hile still never quite dealing with the announced theme of the meeting, e thing we came to hear. We've witnessed, then, a failure to communite a specific idea to a specialized audience. In other words, the presentaon has not been adapted or slanted toward the audience or the occasion. nce the technical man ordinarily talks to his colleagues and even his ain-of-command superiors in such situations, any failure to communicate fectively may not only damage the speaker's prestige but may even hurt s career.

It is equally true in written technical communications that we frently fail to point our ideas toward a definite audience. We are often ld that engineers in industry are weak in report writing; similarly, editors professional journals and technical magazines bemoan the lack of writg ability in technical men. But even when the engineer *can* organize and press his ideas reasonably well on paper, he still may lack the ability to ectively highlight those facts and ideas that the reader would find most eresting and valuable. This ability to focus a report on those aspects a problem most applicable to a particular audience or group of readers the thing we know as slanting.

Slanting is not necessarily the same thing as popularizing. If we ite up the new federal highway construction program for a broad audice in a magazine such as *Popular Science* we are slanting and popularng at the same time. But we could slant the same subject toward a conuction trade journal or an engineers' professional journal with a rather ited and selective readership. This would be slanting without any deee of popularizing.

The commercial writer for trade journals is perhaps most keenly aware

of the need for proper slanting. When he writes, he writes with a parti lar magazine in mind. Frequently he has submitted an outline of his p posed story for editorial approval before actually writing the article. C trast this with the methods of professional, technical, or academic writ who normally produce manuscripts or research reports, and then s looking for journals or convention programs in which to "plant" th

Let's illustrate the possibilities of slanting for both the commer technical writer and the professional engineer with a situation which co be written up by either man from a number of points of view. Recer the Georgia-Pacific Paper Company built a new waste products discha line from its Toledo, Oregon, plant into the Pacific Ocean. Some uni construction techniques were utilized, including blasting reefs by me of explosive charges placed by skin-divers carried to the off-shore locat in helicopters.

The commercial writer would have a field day with these unus "gimmicks". He could slant toward the paper trade journals, construct magazines (general or specialized, national or regional), pipe-line ma zines, industrial waste journals, aviation magazines, skin-diver magaz explosives trade journals, Sunday newspaper magazine sections, etc. possibilities are almost unlimited.

The engineer or technical man employed in connection with the pro could also, for purposes of prestige or profit, write up some interes aspect of the construction. He would normally limit himself to his specialty, of course, developing a more authoritative, professiona oriented presentation than that written by the commercial technical wri Even so, he would probably have several journals in his own field to c sider, each of which had a unique point of view which distinguished it fr the others. The engineer's write-up of the construction project would t have to be slanted toward the point of view of this journal to which had submitted his article.

Obviously there are no journals or professional societies for "Bu ing Waste Products Pipelines into Oceans". Neither are there such ma zines or associations for "Secondary Recovery of 35-gravity Oil from Wilcox Sand", "Levee Bank Stabilization on the Upper Ohio River", "Designing Roller Bearings for Shakeout of Railroad Hopper Ca These are engineering problems which must be communicated throu existing journals or associations. In these channels of communication common denominator of professional interest on the part of readers members may be quite low, meaning that there are only a few basic int ests common to all. In this case, the author in his article or the rep reader at the convention session must slant his presentation toward t basic common interest, rather than let his own highly specialized inte or knowledge have free rein.

Viewed in this light the value of slanting in professional writing sho

e fairly evident. But we'd have to recognize that many technical men mply aren't interested in going in for this sort of publication. To these ien our case for slanting still may not be compelling; the clinching argu- ient must come from another direction. It comes from the report-writing ities expected of an engineer within a company's general organizational ittern.

The professional engineer knows the importance of good reports, but e may not have stopped to consider that a good report is a slanted report. o company executive should have to wade through unsifted and un- ructured information to discover what an engineer is trying to tell him. istead, he should have only the pertinent facts and conclusions reported him.

However, the executive has a responsibility to define the purpose of e report in such a way that the reporting engineer knows what informa- on is pertinent and what is not. Just as a magazine has policies of style d editorial content to which the writer must adhere, a company may ell have standard report writing procedures which indicate to the engineer iat slant is wanted in various reports. The responsibility of conforming this slant is, of course, the engineer's.

In conforming to established procedures the report writer may be mpted to open the files of previous reports in order to copy procedures om them whenever possible. Certainly the idea of checking with past ports is a good one, but the danger always exists that clichés and poor iting may be imitated and perpetuated in the process. Business English s witnessed the survival of such archaic expressions as "In reply to yours the 12th inst. I beg to advise . . ." only because the new executive turns the files for help in his communication problems, just as his predecessor d before him.

Other forms of technical writing are also influenced by this "let's k in the files" philosophy. One of the largest oil companies has a job- scription manual, written at the junior executive level and revised fre- ently, which continues to refer to the "appurtenances" which a particu- employee is required to maintain. The employee, the manual points t, should have a 6th grade education to do this job, but this much ooling isn't absolutely necessary. The executives who revise the manual viously have a better education, but for some reason they are reluctant change the archaic word "appurtenances" which has appeared for many rs in the manual to a modern, accurate term, understandable to a laborer. e foreman, fortunately, doesn't have access to the manual, so he simply s the employee to "take care of the gear" and the job gets done.

Let's ask ourselves some honest questions about getting the job done. e we mastering the tools needed to get the job of technical communica- n accomplished properly? Do we understand the need for adapting terial to the requirements of particular individuals or groups? Do we lize that slanting is not the use of half-truth but rather the use of per-

tinent truth? Are we providing models of good technical communicati which can guide the report-writer into reasonable conformity without i hibiting his originality and flexibility?

These are questions we should consider as we observe the growi need for exchanging information within this increasingly specialized tec nical world.

Engineering Mirrored in Advertisin

Engineers are humans—not robots

IT is important that professional engineers let the public know that th ultimate gifts to civilization are not fabrication, cube roots, logarithr triangulations, reactions, compressions, but rather contributions to grea prosperity, safety, health, convenience, comfort, leisure and more hap ness than humanity has ever known.

True, the engineers' workshops are the mines, the factories, the pow plants, the many laboratories, highways, drafting rooms, executive offi and so forth, but the emphasis should be put where it belongs, on the gi and not the mechanics.

A silkworm makes a contribution to society that is unique, but can credited with no love of mankind, no social purpose. Engineers may inv design, construct, and still, like the silkworm, be considered mere accesso to the progress of civilization, not leaders. And, if this be so, then en neers have only themselves to blame. They should not and must not all themselves to be identified with the mechanical phase of their work a disassociated from its social effects.

Have you ever seen the story of a surgical miracle, resulting in saving of human life, publicized in the lay press this way:

Doctors Dissect Ton of Cadavers to Devise
New Technique in Surgery?

There is a certain amount of scientific aesceticism in medicine, imp sonal, detached from the ultimate objective. This is pure science, the amination of detail in thousands of clinical records of patients, analysis organic matter, tabulation of facts from microscopic investigation, but t is not the theme song of medicine in its public relations. The laity and profession have only one thing in common, the ultimate object, the bett ment of human life.

Engineering has the same ultimate purpose. It allows itself to be associated from the real achievements, and somehow fails to establish the public mind its understanding of human needs and its conscious eff to serve those needs as the real motivating principle of the profession.

Would it then benefit engineers to have that motivation understoo Is there any value to physicians and dentists in the popular appreciation their humanitarianism? Is there a reservoir of power in such public opin upon which they call in emergencies? Is there a civic responsibility which

rofessions assume more capably because they have public confidence built n this respect for motivation? Do business men find it necessary to court ublic confidence in their motivation?

We think that the public relations of engineering can be made satisictory when engineers unite to analyze the difficulties, plan a corrective mpaign and pool their resources to make the campaign successful. They ust study the engineer as he now appears in the news, in fiction, in the ovies, in editorials, in cartoons, in advertising, on the air, to see what cture is being offered the public. Then, wherever the picture is distorted, urred or inadequate, systematically work to bring the profession into true rspective with society.

American Association of Engineers, some years back, made an inusive study of the representation of engineers in all the popular media, d we shall touch upon this subject in the next issue of PROFESSIONAL NGINEER. We shall try to show you how popular agencies unintentionally stort or belittle engineering and we shall demonstrate the method by which brought some of these misrepresentations to the attention of authors d publishers.

Mackinac Bridge Wins Award

The American Institute of Steel Construction has announced that the ackinac Bridge, spanning Mackinac Straits in Michigan, has received the award in the annual competition to choose the most beautiful bridges America. The Board of Judges included four eminent architects and one gineer, William H. Wisely, Executive Secretary of the American Society Civil Engineers.

In a speech at the time of the groundbreaking ceremonies in 1954, . D. B. Steinman, designer of the bridge said: "No effort will be spared make the Mackinac Bridge the finest, safest and most beautiful bridge the world."

The Mackinac Bridge is the ninth Steinman bridge honored in the nual artistic bridge awards.

William Ratigan, whose best-selling historical novel "Soo Canal" vividly reated the life of Charles T. Harvey, builder of the famous Soo Canal, s now written a most fascinating book in which he presents the life of . David B. Steinman, designer and chief engineer of the greatest bridge the world, built only fifty miles below the canal that has no equal earth.

The title of this exceptionally well prepared and most interesting book "The Long Crossing." It is an epic of bridge building on every continent ept Africa, the biography of the engineer who has more long-span dges to his credit than any builder in history. An inspirational book for ng people.

N.C.S.B.E.E. and Registration

Arthur Richards, formerly executive engineer, Larchmont, New York and a past president of the American Association of Engineers, was the Association's official representative at the 38th annual meeting in Roanoke, Virginia on August 20, 21, 22 in the Hotel Roanoke.

The National Council of State Boards of Engineering Examiners is an advisory and coordinating agency established primarily to assist State Boards of Registration for Professional Engineers and Land Surveyors in a cooperative effort for more efficient and uniform administration of state registration laws.

The American Association of Engineers formulated its Model Registration law in 1919, and took for its slogan: "Every engineer a licensee." Uniform laws and adequate enforcement has been the Association's goal ever since.

A number of meetings have been held in New York on the subject of registration attended by representatives of a group of national engineering societies over the years, and at the annual meeting of the Council in 1929 it was agreed that "a recommended uniform registration law for Professional Engineers be compiled by the Committee of the American Society of Civil Engineers with the collaboration of Committees of the National Council of State Boards of Engineering Examiners, American Society of Mechanical Engineers, American Institute of Electrical Engineers, American Railway Association, American Engineering Council and the American Association of Engineers."

After a number of meetings a Model Law was prepared and approved and used by a number of states interested in registration. It was last revised in 1946. This year the Special Committee on the Study of the Model Law, N.C.S.B.E.E. met with representatives of various engineering societies to consider revisions in the law. The Model Law as now proposed is expected to be a guide in framing of new laws or in amending existing laws.

The 1958 meeting of the Council was held in Milwaukee, Wisconsin and A.A.E.'s representative at that meeting was Dr. Max von Berlichingen of Grafton, Wisconsin, a structural engineer with the well-known firm of Herbst, Jacoby & Herbst.

Charles E. Tweedle, executive vice president of the Birdsley Flour and Feed Mills, Macon, Georgia, was the official representative of the Association at the 1957 annual meeting of the National Council. At this meeting which was held in Atlanta, Georgia, a number of distinguished service certificates were presented to engineers and we were happy to know that a Life Member of the American Association of Engineers, Alexander Blair of Lake Placid, Florida, was so honored. Mr. Blair has been a staunch supporter of the registration movement for a number of years.

Dr. Max von Berlichingen

Dr. von Berlichingen holds degrees in Law, Science and Engineering, and is now connected with Herbst, Jacoby and Herbst, Milwaukee, architects, engaged in practically every type of architectural-engineering work. In a number of buildings Dr. von Berlichingen has had an opportunity to use welding instead of rivets or bolts as connections, resulting in a substantial saving in steel.

Dr. David B. Steinman, distinguished engineer, receiving the Gold Medal of the Americas from Frederick Mardus at a luncheon tendered to him by the Chamber of Commerce of Latin America, Hotel Plaza, New York.

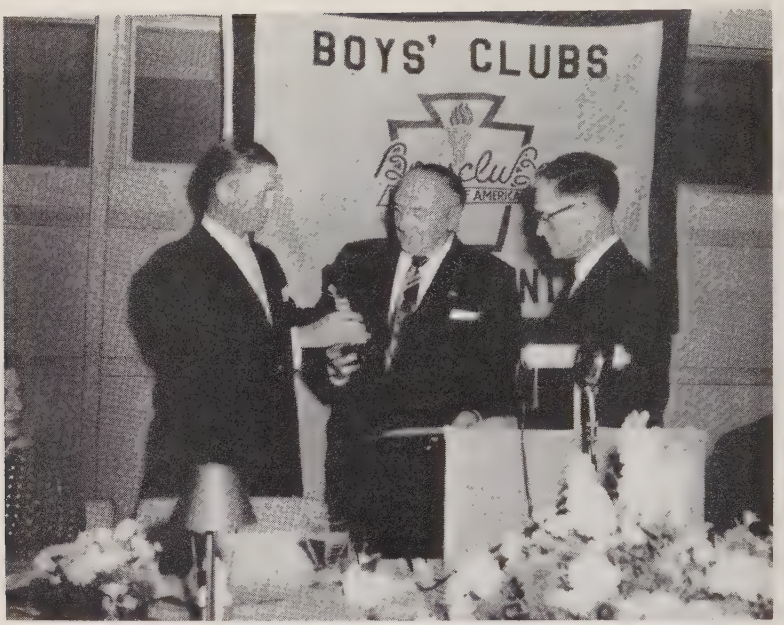
Housholder Honored

Early this year Vic H. Housholder, Phoenix, Arizona, national director of the American Association of Engineers, and an active member of the Phoenix Chapter, was honored by the Boys' Clubs of America, New York, for distinguished service. The citation and award in honor of his many civic accomplishments in the City of Phoenix and State of Arizona, is a highly cherished award in the overall program of the organization. "It was most heart-warming and touching," in the words of Vic. The "Man and Boy Award" trophy is ten inches high, pure gold plated, of a man standing behind a boy who is wearing a Boys' Club T-Shirt. The man has a hand on each of the boy's shoulders and both are looking forward and upward.

The citation and award was presented to Vic by L. C. Jacobson, president, Boys' Clubs of Phoenix, Inc., and in part the citation reads as follows:

"To Vic Housholder for his able and conscientious service as chairman of the Youth and Summer Camp Committee of the Advisory Board of the Salvation Army; as Chairman of the Underprivileged Child Committee of the Phoenix Kiwanis Club and of the Southwest District of Kiwanis; as a member of the Executive Board of the Roosevelt Council of the Boy Scouts of America.

"For his distinctive service to the Boys' Clubs of Phoenix, Inc., as a director since 1953, as an efficient chairman of the 1952 Building Fund



Vic H. Housholder, past president, American Association of Engineers, and now Director, Zone 3, receiving citation and award in honor of his civic accomplishments and in particular his work with the Boys' Clubs. L. C. Jacobson, president, Boys' Clubs of Phoenix, Inc., presents the "Man and Boy Award" trophy to Mr. Housholder.

His work with boys has indeed been outstanding over the years, and according to him is most satisfying, and indeed worthy of a man's efforts.

Campaign, as a member of the House & Extension Committees in 195 Program and Executive Committees in 1957.

"For his direct service to the program of the Boys' Club in arrangi Camperships at Camp-O-Wood, for arranging and transporting 81 boys t the Zoo,

"For his leadership in conducting the Nature Lore program and re cruiting labor and equipment to clear the field as the Southern Unit and fo his efforts in erecting a backstop at the Southern Unit,

"For all of these evidences of his outstanding value to the youth an citizens of both City and State, warm praise and high tribute are hereb bestowed upon Vic H. Housholder."

Before his retirement, Mr. Housholder was district sales manager o ARMCO and has always taken an active part in civic affairs and in loc engineering activities. He has been a member of A.A.E. since the earl 20's, and is also an active member of the A.S.C.E. When not otherwis engaged he finds time to hunt.

We do believe that there is truth in the old saying: "If you want thing well done, ask the busy man."

By their Works They Will Be Remembered

The American Association of Engineers was conceived by men who were actuated by good impulses which, for lack of a better word, we call "fraternalism." It has survived because it is an embodification of that force. The "will for good" for these men flows ceaselessly through the organization. Unlike the impulses which emanate from radio transmitters and which cease when the transmitter stops sending out waves, the will for good emanating from great personalities is infinite. It is endlessly relayed by others who successively receive and send these impulses, and so the good work of the Association carries on, even though some of our great standard bearers have been called to a better world.

During the past year or so a number of influential men who have carried the banner of A.A.E. throughout their careers have left this terrestrial globe, but we shall always remember them for their good deeds and loyal support of the ideals for which this Association stands. May we mention the following members, all of whom we like to call God's noblemen.

Pecos Callahan

One of the most lovable characters in the profession, Pecos H. Callahan, passed away suddenly in San Francisco, California, his home town. Mr. Callahan was the executive secretary of the Consulting Engineers Association of California, in which position he served most efficiently since its organization in 1952. Pecos was also secretary of the State Legislative Council of Civil and Professional Engineers, and perhaps one of, if not the best, posted man on engineering licensure in the country. He served the American Association of Engineers as Director and National President, and was a member of the society's Committee on Registration. Mr. Callahan worked earnestly and steadily with other members of the Association in its early efforts to put registration laws on the statute books of many states, when registration was frowned upon by most of the national engineering societies. However, the American Association of Engineers contitnued its efforts and as most leaders of the profession know, was responsible for getting registration laws enacted in 22 states. This it could not have done, had it not been for the good work of such members as Pecos H. Callahan.

From the early 1930's until 1952, he served as secretary of the California State Board of Registration for Civil and Professional Engineers, and was a member of the American Society of Civil Engineers, Structural Engineers Association of Northern California and the Engineers Club of San Francisco.

G. M. Simonson, member of the California Board, expresses our own feelings and those of his many, many friends, in and out of the profession, in these words: The engineering profession has suffered a great loss with

the passing of Pecos Callahan. He was closely identified with the regis tration of engineers in California since the original registration act becam effective in 1929. He was a man of great ability and a tireless worker fo the good of the engineering profession."

Dorr E. Field

Dorr E. Field, a member of the American Association of Engineers a most since its inception, passed away in July of this year. He was a wel known civil engineer, a valuation engineer and a map maker of high reput Before his retirement he had served on railroads for 30 years.

Mr. Dorr was a licensed preacher in the First Methodist Church, an a past president of the Columbus Exchange Club. He was always ver active in civic affairs including the Boy Scouts. He was born in Vermo and was educated at the Norwich University, where he received his de gree in civil engineering.

Vernon D. George

One of the greatest losses to the Association and its program was t passing of Vernon D. George, Washington, D.C., in August, 1959. M George joined the American Association of Engineers when a very you man in 1923, and for a number of years was an active worker in the Wa ington, D.C., chapter, A.A.E. He was a firm believer in the aims and o jectives of the Association and lent his support whenever the occasion aro

Mr. George was president and treasurer of Seybolt and George, In civil engineers and land surveyors with offices in Silver Spring, Maryla He had served the firm for the past 18 years. Vernon George was a nati of Bayonne, New Jersey, coming to Washington in 1918. Prior to joini Seybolt & George, he was deputy chief survey engineer for the Washingt Suburban Sanitary Commission.

Always deeply interested in civic affairs, he was a member of the Silv Spring Rotary Club, American Congress on Surveying and Mappi American Geophysical Union, Prince Georges-Montgomery Engineeri Society, and the Washington Association of Credit Men.

Ex-Gov. Robert Jones

Former governor of Arizona, Robert Taylor Jones, a staunch supporte of the aims and ideals of the American Association of Engineers, and member of the Association's Phoenix Chapter, was 74 years old when h passed away. He was a prominent political figure, businessman and en gineer.

Mr. Jones served his state as chief executive from January 1939 January 1941. Early in his career he did civil engineering work for th Louisville and Nashville Railroad, and worked on the construction of th Panama Canal a short time thereafter. His interest in railroad constructio brought him to Arizona and in 1909 the Southern Pacific put him in charg of building the line between Kelvin and Hayden Junction.

Gov. Jones served three terms in the Arizona Senate, and was president of the Senate during his second term.

The Association and the local chapter lost a good man in his passing.

R. H. Cressingham

Phoenix Chapter, during the year, suffered another loss in the passing of R. H. Cressingham, retired state engineer for the Mountain States Telephone and Telegraph Company. Cress, as he was affectionately known in the State, was the first telephone state engineer in Arizona and was credited with developing the company's Phoenix Credit Union for employees.

Mr. Cressingham was a graduate of Colorado University, and an active member of the Phoenix Chapter, A.A.E. for many years, and sincerely believed in the purposes of the Association.

Harry G. Culverhouse

Harry G. Culverhouse of Birmingham, Ala., a former director of the American Association of Engineers, passed away during the year. He was a "Southern Gentleman" of the highest type, a man it was a pleasure and a privilege to know.

Mr. Culverhouse was one of the organizers of the Alabama Association of Probate Judges and County Commissioners, and became its first president. During the last 20 years he had been associated with Armco Drainage and Metal Products Company. Mr. Culverhouse was a native of Birmingham, graduate of the Alabama Polytechnic Institute, and served four years with the Alabama State Highway Department in Montgomery.

Howard H. Levering

Another former member of the national Board of Directors of A.A.E., Howard A. Levering of Huntington, and Ceredo, W. Va., passed away at his home after a long illness.

Howard received his degree of Engineer of Mines from Ohio State University in 1910, and worked as a mining engineer with the Island Creek Coal Co. at Holden. In 1914 he became assistant testing engineer with the Ohio Highway Department, serving until 1918, when he became the first county engineer of Wayne County. In 1922 he became associated with the West Virginia Road Commission, and retired in 1954.

He served the Association as National President, Vice President, and Director, and was active in the Local chapter, and other civic groups of his home town.

Asa G. Proctor

Another great loss to the engineering profession and the Association was the passing of Asa Proctor, a well-known consulting engineer, residing in Woodland, California. Mr. Proctor was educated at Stanford University and was a member of Tau Beta Pi, A.S.C.E., and the Structural Engineers Association of Northern California.

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Analysis of Straight-line Data, Forman S. Acton, Assoc. Prof., E.E., Princeton Univ. $9.00. Covers thoroughly one important aspect of engineering statistics —the analysis of experimental data that can be described in terms of linear relationship.

Analytical Transients, T. C. Gordon Wagner, Prof., E.E., Univ. of Maryland, 1959, $8.75. A completely modern, rigorous, and lucid treatment of transient behavior by an authority on the subject, designed primarily as a textbook, but useful to all others interested in the subject.

Electric Circuit Theory, Devices, Models, and Circuits, H. J. Zimmermann, Prof., E.E., and Samuel J. Mason, Dept. of El. Engineering, M.I.T. $10.75. This excellent book deals principally with methods of electronic circuits — the model concept is stressed. Special attention is given to piecewise-linear models suitable for large-signal operation.

Fuels and Lubricants, by M. Popovich, Prof., M.E., Oregon State College, and Carl Hering, Prof., Ch.E., U.S. Naval Postgraduate School, Monterey, Cal. $8.00. An accurate and convenient source of information on fuels and lubricants. The authors discuss important fuels, including boiler, internal combustion engine, and jet fuels also rocket propellents and nuclear fuels, thus, an up-to-date book on the subject.

Basic Data of Plasma Physics, by S. Brown, Assoc. Prof. of Physics, M.I. $6.50. Here is a new book that presen the fundmental data for plasma physic necessary for an understanding of a work in gas discharges, plasma physic the plasma in controlled thermonucle devices, research, etc. A highly techn cal, informative book.

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Aircraft and Missile Propulsion, V II, M. J. Zucrow, Purdue Univ., 19 $13.00. The book presents the Gas T bine, Power Plant, the Turboprop, T bojet, Ramjet, and Rocket Enginee and deals with the analysis of the cyc and the performance characteristics propulsion engineers.

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Plastic Design of Steel Frames, Lynn S. Beedle, Dept. of C.E., Lehigh, 1959. $13.00. Principles and methods that are the basis for plastic design are presented in this well written book. How they may be used in the solution of practical building frame design problems is also explained.

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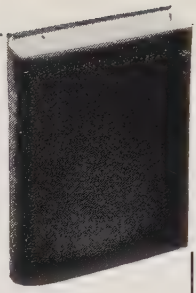

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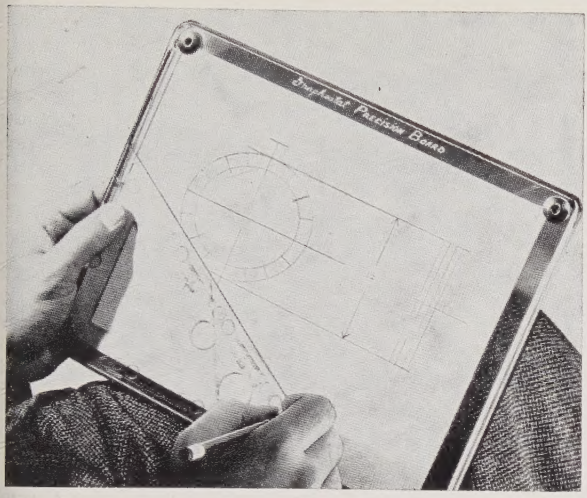

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